

Serial No. 09/770,543
Amdt. dated August 31, 2004
Reply to Office action of June 1, 2004

REMARKS

This amendment is in response to the Office Action dated June 1, 2004. Entry of this Amendment and reconsideration of this application are respectfully requested.

Rewritten in Independent Form

In the Examiner's paragraph 6, it is noted that claims 3-5 would be allowable if rewritten in independent form, incorporating all of the limitations of their base claims and any intervening claims.

In response, claim 3 has been rewritten in accordance with the Examiner's suggestion, amended to incorporate the limitations of its base claim (1) and any intervening claims (none).

Claims 4 and 5 depend from the rewritten claim 3, and thus do not require rewriting.

Therefore, each of claims 3-5 should now be in proper form for allowance.

Please also note that rewriting dependent claim 3 in independent form is an amendment purely of form, since it does not introduce any new limitations into the claim.

Rejections under 35 USC §102

Claims 1 and 2 were rejected as anticipated by a patent to Nehoda. In response, claim 1 has been amended to better clarify its differences with respect to Nehoda.

As amended, claim 1 is directed to an asynchronous digital blanking circuit. The blanking circuit comprises:

- an input connected to receive a digital input signal,
- a blanking interval circuit which asynchronously triggers the start of a blanking interval upon the occurrence of a transition of the digital input signal, and

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- an output,
- the digital blanking circuit arranged such that the output is prevented from re-transitioning during the blanking interval, and asynchronously tracks the digital input signal otherwise.

As explained in the specification between page 3, line 19 and page 4, line 2, the purpose of the invention recited in claim 1 is to prevent noise that might be present in a digital input signal from reaching a following circuit. In particular, the invention blocks noise in the digital input signal that arises after the digital input signal transitions from low-to-high or high-to-low.

Essential to the present invention's ability to achieve the purpose stated above is its asynchronous operation. As required by the amended claim 1, a transitioning digital input signal asynchronously triggers a "blanking interval", during which the circuit's output is prevented from re-transitioning. The circuit is also required to asynchronously track the digital input signal when not in a blanking interval. The present blanking circuit does not receive a clock signal, and the generation of the blanking interval is not synchronized to any other signal.

The asynchronous nature of the present invention enables the blanking interval to be triggered nearly instantaneously upon the occurrence of a transition of the digital input signal, which provides the best possible protection against input signal noise reaching a following circuit. It also serves to minimize the latency that might otherwise be present in the blanking circuit's output, such that a valid transition is immediately propagated to the output.

Support for the "asynchronous" requirements added to claim 1 can be found in each of the circuit and timing diagrams shown in FIGs. 1-8, none of which include a clock input or a clock signal

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of any sort.

The cited art is quite different. The patent to Nehoda describes a circuit designed to detect transitions that occur within a predetermined timing window, and to ignore transitions that occur outside the timing window.

The Nehoda circuit is a synchronous logic circuit - that is, each major subcircuit is clocked with a common clock. With reference to Nehoda's FIG. 1b, it is seen that edge detector 12 and state machines 14 and 16 each receive clock signal CLK_{IN}, and that their respective outputs are synchronous with CLK_{IN}. Two of these synchronous outputs provide the inputs to subcircuit 18 which produces blanked output signal RXD_{OUT} - such that the inputs to subcircuit 18 and its output RXD_{OUT} can only react when CLK_{IN} toggles.

As such, Nehoda does not asynchronously trigger the start of a blanking interval upon the occurrence of a transition of the digital input signal, and does not asynchronously track the digital input signal when outside of a blanking interval - as required by the amended claim 1.

In addition, the Nehoda circuit, being a clocked circuit, inherently introduces latency. A valid transition does not immediately propagate to the output as it does in the applicants' claimed circuit, but rather must wait for CLK_{IN} to toggle.

To summarize, Nehoda fails to disclose:

- an asynchronous digital blanking circuit;
- a blanking interval circuit which asynchronously triggers the start of a blanking interval upon the occurrence of a transition of the digital input signal; and
- the digital blanking circuit arranged such that the

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digital input signal is asynchronously tracked when outside of a blanking interval;

all of which are explicitly required in the amended claim 1.

As Nehoda fails to disclose all the major elements of the amended claim 1, the patent to Nehoda cannot and does not anticipate the amended claim 1 - which is therefore allowable over Nehoda.

The amended claim 1 is the parent of claim 2, which should therefore be allowable along with claim 1.

It must be noted, however, that claim 2 is also allowable on independent grounds. Claim 2 requires that the blanking interval circuit be arranged to provide a blanking interval having a first duration for a low-to-high digital input signal transition, and a second duration for a high-to-low transition. Nehoda does not disclose this feature. Rather, Nehoda discloses the generation of a blanking signal when an edge is detected within the predetermined timing window. There is no discussion of blanking signals of different durations depending on the polarity of a transition. The Examiner refers the applicant to FIG. 4A, but FIG. 4A illustrates only that the output is either blanked (as it is through time T_{A6}) or not blanked (after time T_{A6}).

Thus, as nothing analogous to the limitation recited in claim 2 is found in Nehoda, claim 2 is allowable over Nehoda on this independent basis.

All of the claims presently in the application are believed to be patentably distinct with respect to the cited art and to otherwise be in proper form for allowance. A Notice of Allowance is respectfully requested.

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